

WHAT IS CLAIMED IS:

- 1                   1.     A wireless remote control system comprising:  
2                   a wireless transmitter having a button arranged to cause the  
3 transmitter to transmit a command signal upon actuation by a user;  
4                   a receiver for receiving the transmitted command signal;  
5                   a signal detector connected to the receiver for detecting the distance  
6 of the transmitter from the receiver as a function of the signal strength of the  
7 received signal; and  
8                   a controller responsive to the signal detector for performing a first  
9 associated function if the transmitter is detected as being within a predetermined  
10 range, and a different function if the transmitter is detected as being outside the  
11 predetermined range.
- 1                   2.     The system of claim 1 wherein the wireless remote control  
2 system comprises a remote keyless entry system for a vehicle, said receiver being  
3 mounted to the vehicle.
- 1                   3.     The system of claim 1 wherein the receiver is arranged to  
2 generate an output signal that is proportional to the signal strength of the received  
3 command signal.
- 1                   4.     The system of claim 1 wherein the receiver comprises a  
2 superheterodyne receiver arranged to produce a Received Signal Strength Indicator  
3 (RSSI) output.
- 1                   5.     The system of claim 1 wherein the signal detector is arranged  
2 to compare the signal strength of the received command signal to a predetermined  
3 threshold value indicative of distance from the receiver.
- 1                   6.     The system of claim 5 wherein the signal detector is arranged  
2 to compare the signal strength of the received command signal to a plurality of  
3 different predetermined threshold values, each indicative of different distance from

4 the receiver, and the controller is arranged to perform a different function for each  
5 distance threshold.

1 7. The system of claim 1 further comprising a signal processor  
2 connected to the receiver for determining whether the received command signal is  
3 one of a set of commands enabled only for short-range operation, wherein the  
4 controller is responsive to the signal processor for performing the function  
5 associated with a short-range enabled command signal if the transmitter is detected  
6 as being within the predetermined range.

1 8. The system of claim 1 wherein the transmitter comprises an  
2 FM transmitter, the transmitter arranged to transmit the command signal with a  
3 narrower FM deviation if the command signal is to trigger operation of the first  
4 function, and a wider FM deviation if the command signal is to trigger operation of  
5 the other function.

1 9. The system of claim 1 wherein the transmitter comprises an  
2 ASK transmitter, the transmitter arranged to transmit the command signal with a  
3 narrower bit width if the command signal is to trigger operation of the first function,  
4 and a wider bit width if the command signal is to trigger operation of the other  
5 function.

1 10. A method of remotely controlling operation of at least two  
2 different functions in a wireless remote control system, wherein the system includes  
3 a transmitter and a receiver, the method comprising:  
4 transmitting a command signal;  
5 receiving the command signal;  
6 detecting the distance of the transmitter from the receiver as a  
7 function of the signal strength of the received signal; and  
8 performing a first function if the transmitter is detected as being  
9 within a predetermined range, and a different function if the transmitter is detected  
10 as being outside the predetermined range.

1                   11. The method of claim 10 wherein receiving the command  
2 signal further comprises generating an output signal that is proportional to the signal  
3 strength of the received command signal.

1                   12. The method of claim 10 wherein detecting the distance  
2 comprises comparing the signal strength of the received command signal to a  
3 predetermined threshold value indicative of distance from the receiver.

1                   13. The method of claim 12 further comprising comparing the  
2 signal strength of the received command signal to a plurality of different  
3 predetermined threshold values, each indicative of different distance from the  
4 receiver, and performing a different function for each distance threshold.

1                   14. The method of claim 10 further comprising determining  
2 whether the received command signal is one of a set of commands enabled only for  
3 short-range operation, and performing the function associated with a short-range  
4 enabled command signal if the transmitter is detected as being within the  
5 predetermined range.

1                   15. The method of claim 10 further comprising altering a  
2 parameter of a command signal to reduce signal strength if the command signal is  
3 only enabled for a shorter range.